

Styron Magnum™ 9020 ABS, High Gloss

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Molded

Material Notes:

MAGNUM® ABS resins are thermoplastic materials which provide an excellent balance of processability, impact resistance and heat resistance as imparted by the various polymer compositions. MAGNUM ABS resin are available in a wide range of melt flow rates, impact strength and heat resistance for both high and low gloss applications manufactured by injection molding, sheet or profile extrusion and thermoforming. The MAGNUM 9000 series of high gloss ABS resins are designed to offer a wide range of impact strengths and melt flow rates to meet the needs of the durables injection molding markets. The 9000 series products offer typical Izod impact strength values from 210 to 400 J/m and melt flow rates ranging from 2.5 to 7.0 g/10min. The gloss values are typically greater than 95% on the 60. Gardner scale for the highest gloss resins and greater than 90% for those products having a broader range of gloss. MAGNUM 9020 ABS resin is one of the highest gloss resin with a high impact strength and medium flow. MAGNUM 9020 is used primarily in injection molding durable applications like floor care and outdoor equipment where a good balance between impact strength and processability is needed. Data provided by Dow Chemical. This product line was spun off from Dow Chemical to Styron in 2010.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Styron-Magnum-9020-ABS-High-Gloss.php

| Physical Properties | Metric | English | Comments |
|-----------------------|--|--|--------------|
| Density | 1.04 g/cc | 0.0376 lb/in ³ | ASTM Data |
| Melt Density | 0.975 g/cc | 0.0352 lb/in ³ | Melt density |
| Linear Mold Shrinkage | 0.0055 cm/cm | 0.0055 in/in | |
| Melt Flow | 5.0 g/10 min @Load 3.80 kg, Temperature 230 °C | 5.0 g/10 min @Load 8.38 lb, Temperature 446 °F | ASTM Data |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|------------------------|----------------------------|--------------------|
| Hardness, Rockwell R | 107 | 107 | |
| Tensile Strength, Ultimate | 33.1 MPa | 4800 psi | ASTM Data |
| Tensile Strength, Yield | 41.4 MPa | 6000 psi | ASTM Data |
| Elongation at Break | 50 % | 50 % | ASTM Data |
| Elongation at Yield | 2.5 % | 2.5 % | ISO Data |
| Tensile Modulus | 2.07 GPa | 300 ksi | ASTM Data |
| Izod Impact, Notched | 2.94 J/cm | 5.51 ft-lb/in | ASTM Data |
| Charpy Impact Unnotched | 8.00 J/cm ² | 38.1 ft-lb/in ² | ISO Data, Low Temp |
| | NB | NB | ISO Data |

| Mechanical Properties | Metric | English | Comments |
|-----------------------|--------------------------------|------------------------------------|--------------------------------|
| | 2.40 J/cm ² | 11.4 ft-lb/in ² | ISO Data |
| Impact Test | 50.0 J @Temperature 23.0 °C | 36.9 ft-lb @Temperature 73.4 °F | Instrumented Dart Total Energy |

| Thermal Properties | Metric | English | Comments |
|---|-------------------------------------|--|---|
| CTE, linear, Parallel to Flow | 102 µm/m-°C @Temperature 20.0 °C | 56.7 µin/in-°F @Temperature 68.0 °F | ISO data |
| Specific Heat Capacity | 2.13 J/g-°C | 0.509 BTU/lb-°F | |
| Thermal Conductivity | 0.187 W/m-K | 1.30 BTU-in/hr-ft ² -°F | |
| Deflection Temperature at 0.46 MPa (66 psi) | 94.0 °C | 201 °F | Unannealed; ASTM Data |
| Deflection Temperature at 1.8 MPa (264 psi) | 79.0 °C | 174 °F | Unannealed; 104°C (219°F) annealed; ASTM Data |
| Vicat Softening Point | 108 °C | 226 °F | |
| Flammability, UL94 | HB @Thickness 1.47 mm | HB @Thickness 0.0579 in | |

| Optical Properties | Metric | English | Comments |
|--------------------|--------|---------|--------------------|
| Gloss | 95 % | 95 % | Gardner Gloss, 60° |

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